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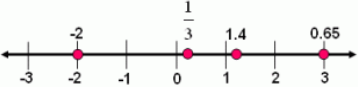


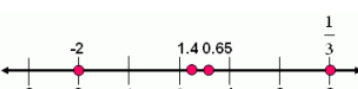
*Algebra 1 CRT Review Version 1*

1. Which list contains only rational numbers?

- a.  $\pi$ , 1.6, 3.4
- b. -2, 1,  $\sqrt{2}$
- c. -4,  $\frac{1}{3}$ ,  $\sqrt{5}$
- d.  $\frac{1}{2}$ , 0, 5

2. Which of the number lines shows these numbers arranged in order from least to greatest?

$\frac{1}{3}$ , -2, 1.4, 0.65

- a. 
- b. 
- c. 
- d. 

3. Simplify  $8\sqrt{2} + 2\sqrt{2} + 3\sqrt{2}$

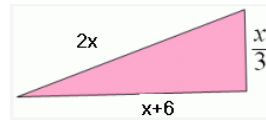
- a.  $26\sqrt{2}$
- b.  $26\sqrt{6}$
- c.  $13\sqrt{6}$
- d.  $13\sqrt{2}$

4. Simplify the expression

$$3 - 8 \cdot 2 \div 4 + 7$$

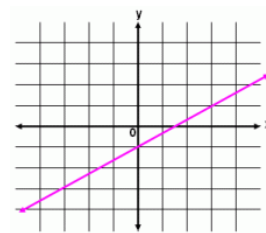
- a. 6
- b. -8
- c. 4.5
- d. 2

5. What is the perimeter of this triangle if  $x = 12.6$ ?



- a. 48 cm
- b. 47 cm
- c. 46 cm
- d. 45 cm

6. What is the slope of the line graphed below?



- a.  $\frac{2}{3}$
- b.  $\frac{3}{2}$
- c.  $-\frac{3}{2}$
- d.  $-\frac{2}{3}$

7. What is the slope of the line that passes through the points (6, -6) and (-2, 6)?

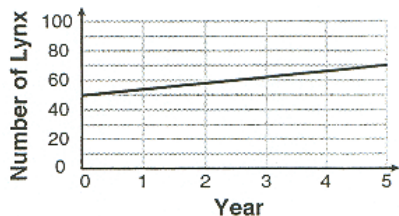
- a.  $-\frac{3}{2}$
- b. 0
- c.  $\frac{2}{3}$
- d. 1

8. What is the slope of the graph of  $6x - 2y = 24$ ?

- a. -12
- b. 3
- c. -6
- d. 6

9. How are the lines  $y = x + 5$  and  $y = x - 5$  related?
- They have the same slope.
  - They are perpendicular.
  - They are the same line.
  - They have the same y-intercept.

10. The graph below shows the population of lynx in a section of the Fishlake National Forest over a five-year study period. What does the y-intercept of the graph tell us about the lynx population?



- There were 50 lynx when the study began.
  - There are now 70 lynx.
  - The study lasted 5 years.
  - The population of the lynx is growing by an average of 4 lynx a year.
11. The bill (parts and labor) for the repair of an automobile was \$350. The cost for parts was \$285. The cost of labor was \$35 per hour. Let  $x$  represent the number of hours of labor. Which of these equations would you solve to find the number of hours of labor?
- $285 = -350 + 35x$
  - $35x + 285 = -350$
  - $350 = 285 + 35x$
  - $285 = 35x + 350$
12. Which of the following is the slope-intercept form of the equation  $3x = y - 6$ ?
- $3x - y = -6$
  - $y = 3x + 6$
  - $3x + y = 6$
  - $y = 3x + 2$

13. This table shows some temperatures on the Celsius scale and the corresponding temperatures on the Fahrenheit scale. Which of the following is true about the data?

C	0	5	10	15	20	25	30
F	32	41	50	59	68	77	86

- The data is linear.
  - The data is nonlinear.
  - The slope of the graph of the data is zero.
  - The data shows a negative correlation.
14. A person is paying \$10 a week to a friend to repay a \$100 loan. What does the slope of the line represent (as a rate of change)?

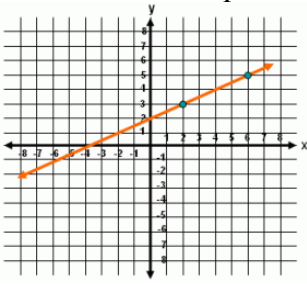


- The debt is decreasing at a rate of \$10 per week.
  - The debt is increasing at a rate of \$10 per week.
  - The original debt was \$100.
  - The debt will be paid off in 10 weeks.
15. What is the equation in slope-intercept form of the line whose graph has a slope of 5 and a y-intercept of -8?
- $5x - y = -8$
  - $y = 5x - 8$
  - $y = -8x + 5$
  - $y = 8x - 5$

16. Write the equation of the line that passes through (0, 2) and (4, 3).

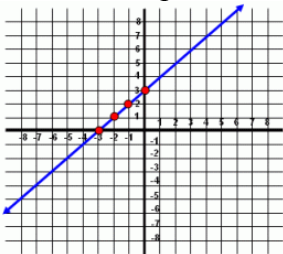
- $y = \frac{1}{4}x + 2$
- $y = 2x + 8$
- $y = 4x + 2$
- $y = -\frac{1}{4}x + 2$

17. What is the equation of this graphed line?



- a.  $y = -\frac{1}{2}x - 2$
- b.  $y = \frac{1}{2}x + 2$
- c.  $2x - y = 2$
- d.  $y + x = 2$

18. Using this graph, what is the ordered pair for the x-intercept?

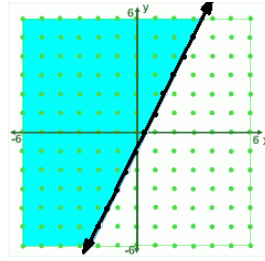


- a. (3, 0)
- b. (0, 3)
- c. (0, -3)
- d. (-3, 0)

19. Find the x- and y-intercept of the graph of  $y = 4x + 12$ .

- a. x-intercept = (-3, 0)  
y-intercept = (0, 12)
- b. x-intercept = (0, -3)  
y-intercept = (12, 0)
- c. x-intercept = (-3, 12)  
y-intercept = (0, 0)
- d. x-intercept = (0, 0)  
y-intercept = (12, -3)

20. Which of the following is the inequality of this graph?



- a.  $y > 2x - 1$
- b.  $y \geq 2x - 1$
- c.  $y \leq 2x - 1$
- d.  $y < 2x - 1$

21. Simplify  $(6a^4b^3c)(2ab^4c^2)$

- a.  $8a^4b^7c^2$
- b.  $8a^4b^7c^2$
- c.  $12a^4b^7c^2$
- d.  $12a^5b^7c^3$

22. Jena has a triangular garden with a perimeter that can be represented by  $11g^2 - 29g + 10$ . The sum of two sides of the garden is represented by  $6g^2 - 6g + 33$ . Which expression represents the length of the third side?

- a.  $17g^2 - 35g + 43$
- b.  $5g^2 - 35g - 23$
- c.  $5g^2 - 23g - 23$
- d.  $5g^2 + 23g + 23$

23. Which of the following is the product of  $(2x - 3)$  and  $(x + 4)$ ?

- a.  $2x^2 + 11x + 12$
- b.  $2x^2 + 5x + 12$
- c.  $2x^2 - 11x - 12$
- d.  $2x^2 + 5x - 12$

24. Find the greatest common factor of  $20gh$  and  $36g^2h^2$

- a.  $20g^2h^2$
- b.  $4gh$
- c.  $12gh$
- d.  $4g^2$

25. Factor the polynomial  $x^2 + 5x + 6$  using the area model.

$x^2$	$x$	$x$	$x$
$x$	1	1	1
$x$	1	1	1

- a.  $(x + 4)(x + 2)$
- b.  $(x + 3)(x + 2)$
- c.  $(x + 1)(x + 2)$
- d.  $(x + 6)(x + 1)$

26. Solve:  $7 = 7(x + 3) - 3x$

- a. 3.5
- b. -1
- c. -3.5
- d. 1

27. Tom wants to rent a motor-bike from Bob's rentals, and the prices for three and five hours are listed in this table. If the data in the table is linear, what is the amount he will spend for eight hours on a motor-bike?

Motor-bike Rental			
Time	3 hours	5 hours	8 hours
Amount	\$15.50	\$18.50	?

- a. \$23.00
- b. \$21.50
- c. \$24.50
- d. \$22.60

28. Solve for  $x$  in the following equation:

$$ab + cx = d$$

- a.  $x = \frac{d}{c} - ab$
- b.  $x = d - \frac{ab}{c}$
- c.  $x = d - ab - c$
- d.  $x = \frac{d - ab}{c}$

29. Solve the following equation for  $L$ :

$$V = LWH$$

- a.  $L = \frac{WH}{V}$
- b.  $\frac{WH}{L} = V$
- c.  $\frac{V}{L} = WH$
- d.  $L = \frac{V}{WH}$

30. Find  $y$  if  $\frac{5 + y}{y - 3} = \frac{14}{10}$

- a. -23
- b.  $\frac{47}{13}$
- c. 23
- d.  $-\frac{47}{13}$

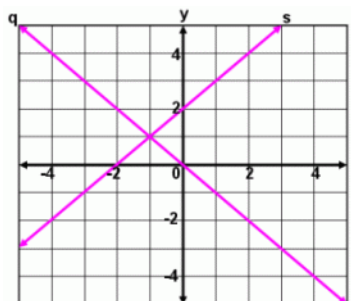
31. Which of the following is the solution to this system of linear equations?

$$4x + 8y = 16$$

$$2x - 6y = -12$$

- a. (1, 2)
- b. (1, -2)
- c. (0, 2)
- d. (0, -2)

32. Which ordered pair is the solution of the system of equations represented by lines  $q$  and  $s$ ?

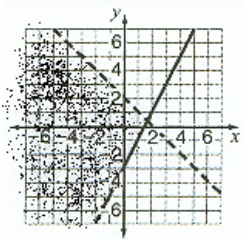


- a. (0, 2)
- b. (1, -1)
- c. (0, -2)
- d. (-1, 1)

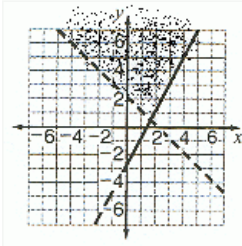
33. Identify the solution to the following system of inequalities.

$$y \leq 2x - 3$$

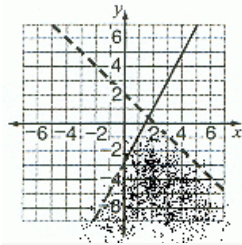
$$y > -x + 2$$



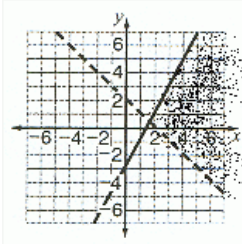
a.



b.

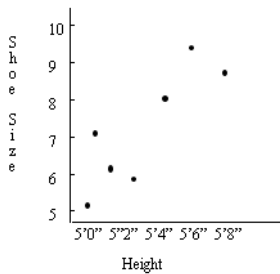


c.



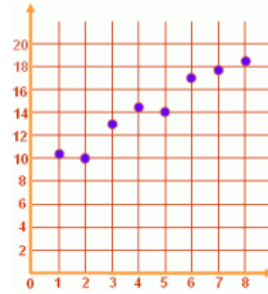
d.

34. Use the graph below to answer the following question. What type of correlation exists between shoe size and height of seven students?



- Positive
- No correlation
- Negative
- Cannot be determined

35. The graph of which equation best fits this scatter plot?



- $y = 2x - 8$
- $y = 2x + 10$
- $y = -x - 8$
- $y = -2x + 10$

*Algebra I CRT Review Version 1 Key*

1. d
2. c
3. d
4. a
5. a
6. a
7. a
8. b
9. a
10. a
11. c
12. b
13. a
14. a
15. b
16. a
17. b
18. d
19. a
20. b
21. d
22. c
23. d
24. b
25. b
26. c
27. a
28. d
29. d
30. c
31. c
32. d
33. d
34. a
35. b